

SURGICAL MANIPULATOR FOR A TELEROBOTIC SYSTEM

ABSTRACT OF THE DISCLOSURE

The invention is directed to manipulator assembly (2) for holding and manipulating a surgical instrument (14) in a telerobotic system. The assembly comprises a base (6) fixable by passive or power driven positioning devices to a surface, such as an operating table, and an instrument holder (4) movably mounted on the base. The instrument holder comprises a chassis (6) and an instrument support (70) movably mounted on the body and having an interface engageable with the surgical instrument to releasably mount the instrument to the instrument holder. A drive assembly (7) is operatively coupled to the instrument holder for providing the instrument with at least two degrees of freedom. The instrument holder is separable from the base and the drive assembly so that the holder can be sterilized. The assembly further includes a force sensing element (52) mounted distal to the holder and the drive assembly for detecting forces exerted on the surgical instrument and providing feedback to the surgeon. The assembly is attached to a remote center positioner (300) for constraining the instrument to rotate a point coincident with the entry incision and an inclinometer (350) for preventing gravitational forces acting on the system's mechanisms from being felt by the surgeon.

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